

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application. The following listing provides the amended claims with the amendments marked with deleted material crossed out and new material underlined to show the changes made.

Claims 1-62. (Canceled)

63. (New) A method of assessing a chemical material by analyzing a digital image of a signal associated with the chemical material, said digital image comprising a plurality of image values, the method comprising:

- (a) specifying a region in the digital image;
- (b) performing computations on image values associated with the specified region;
- (c) re-specifying the region based on the computations;
- (d) using image values associated with the re-specified region to assess the chemical material.

64. (New) The method of claim 63, wherein performing computations comprises generating a pixel value distribution.

65. (New) The method of claim 64, wherein the pixel value distribution is a pixel intensity distribution.

66. (New) The method of claim 64, wherein the pixel value distribution comprises a distribution of signal pixels.

67. (New) The method of claim 63, wherein the image values associated with the region comprise image values of pixels within the region.

68. (New) The method of claim 63, wherein the image values associated with the region comprise image values of pixels inside and outside of the region.

69. (New) The method of claim 63, wherein re-specifying the region comprises specifying signal pixels.

70. (New) The method of claim 63, wherein re-specifying the region comprises specifying non-signal pixels.

71. (New) The method of claim 70, wherein the non-signal pixels comprises background pixels.

72. (New) The method of claim 70, wherein the non-signal pixels comprises undetermined pixels.

73. (New) The method of claim 63, wherein specifying the region comprises identifying at least one representative pixel and an area about said representative pixel.

74. (New) The method of claim 63 further comprising depositing the chemical material on a slide.

75. (New) The method of claim 63 further comprising scanning the chemical material to generate the digital image.

76. (New) A system for assessing a chemical material by analyzing a digital image of a signal associated with the chemical material, said digital image comprising a plurality of image values, the system comprising:

- (a) a memory storing sets of instructions for:
 - (i) specifying a region in the digital image;
 - (ii) performing computations on image values associated with the specified region;
 - (iii) re-specifying the region based on the computations;
 - (iv) using image values associated with the re-specified region to assess the chemical material;

(b) a processor for executing the sets of instructions.

77. (New) The system of claim 76, wherein the set of instructions for performing computations comprises instructions for generating a pixel value distribution.

78. (New) The system of claim 77, wherein the pixel value distribution is a pixel intensity distribution.

79. (New) The system of claim 77, wherein the pixel value distribution comprises a distribution of signal pixels.

80. (New) The system of claim 76, wherein the image values associated with the region comprise image values of pixels within the region.

81. (New) The system of claim 76, wherein the image values associated with the region comprise image values of pixels inside and outside of the region.

82. (New) The system of claim 76, wherein the set of instructions for re-specifying the region comprises instructions for specifying signal pixels.

83. (New) The system of claim 76, wherein the set of instructions for re-specifying the region comprises instructions for specifying non-signal pixels.

84. (New) The system of claim 83, wherein the non-signal pixels comprises background pixels.

85. (New) The system of claim 83, wherein the non-signal pixels comprises undetermined pixels.

86. (New) The system of claim 76, wherein the set of instructions for specifying the region comprises instructions for identifying at least one representative pixel and an area about said representative pixel.

87. (New) The system of claim 76 further comprising an arrayer for depositing the chemical material on a slide.

88. (New) The system of claim 76 further comprising a scanner for scanning the chemical material to generate the digital image.

89. (New) A method of assessing a chemical material by analyzing a digital image of a signal associated with the chemical material, the digital image comprising a plurality of pixels, the method comprising:

- (a) generating a pixel value distribution for a plurality of pixels;
- (b) using the generated pixel value distribution to classify at least one pixel as a signal pixel and at least one pixel as a non-signal pixel;
- (c) using at least one classified pixel to assess the chemical material.

90. (New) The method of claim 89 further comprising before using the generated pixel value distribution, classifying at least two pixels as tentative signal pixels, wherein using the generated pixel value distribution comprises using the generated pixel intensity distribution to reclassify one of the two tentative signal pixels a non-signal pixel, wherein using the classified pixel comprises using the remaining tentative signal pixel to assess the chemical material.

91. (New) The method of claim 89, wherein using the generated pixel value distribution comprises using the distribution to identify a plurality of signal pixels, wherein using the classified pixel comprises using pixel values associated with the plurality of signal pixels to assess the chemical material.

92. (New) The method of claim 91, wherein using the generated pixel value distribution further comprises using the distribution to identify a plurality of non-signal pixels, wherein the using classified pixel further comprises using pixel values associated with the plurality of non-signal pixels to assess the chemical material.

93. (New) The method of claim 92, wherein using the classified pixel further comprises performing calculations using pixel values associated with the plurality of signal and non-signal pixels to assess the chemical material.

94. (New) The method of claim 89, wherein said pixel distribution comprises a distribution of signal pixels.

95. (New) The method of claim 89, wherein said pixel value distribution is a pixel intensity distribution.

96. (New) The method of claim 89, wherein the non-signal pixel is a background pixel.

97. (New) The method of claim 89, wherein the non-signal pixel is an undetermined pixel.

98. (New) The method of claim 89 further comprising depositing the chemical material on a slide.

99. (New) The method of claim 89 further comprising scanning the chemical material to generate the digital image.

100. (New) A method of assessing a chemical material by analyzing a digital image of a signal associated with the chemical material, the method comprising:

- (a) identifying a region in the digital image;
- (b) classifying at least two pixels within the region as tentative signal pixels;
- (c) generating a pixel intensity distribution for a plurality of pixels;
- (d) using the generated pixel intensity distribution to reclassify one of the two pixels within the region as a non-signal pixel;
- (e) using the remaining tentative signal pixel to assess the chemical materials.

101. (New) The method of claim 100 further comprising classifying at least one pixel outside of the region as a tentative non-signal pixel.

102. (New) The method of claim 101 further comprising:

(a) using the generated pixel intensity distribution to reclassify the tentative non-signal as a signal pixel;

(b) using the signal pixel to assess the chemical material.

103. (New) The method of claim 101, wherein at least two pixels outside of the region are classified as tentative non-signal pixels, further comprising:

(a) using the generated pixel intensity distribution to reclassify one of the two pixels outside the region as a signal pixel;

(b) using the remaining tentative non-signal pixel to assess the chemical material.

104. (New) The method of claim 100, wherein identifying the region comprises identifying at least one representative pixel and a region about the representative pixel.

105. (New) The method of claim 104, wherein a representative pixel is a center pixel, wherein the region about the representative pixel is a radius about the center pixel.

106. (New) The method of claim 100 further comprising scanning the chemical material to generate the digital image.

107. (New) The method of claim 100 further comprising depositing the chemical material on a slide.